

IN THE CLAIMS:

The following is a complete listing of claims in this application.

Claims 1-13 (canceled).

14. (currently amended) Method for measuring the relative rotation of a first object with respect to a second object comprising the steps of:

- arranging a flexible elongated element between said first and said second object and connecting ends of said flexible elongated element to said first and second objects, respectively, said element having a neutral axis, which does not change in length when bending, and defining at least one line spaced apart from said neutral axis and parallel to the neutral axis that extends from said first object to said second object, wherein said line is spaced apart from said neutral axis by a predetermined distance; and

- rotating said first object relative to said second object;

- measuring a variation in length of said line during a relative rotation between said first and said second object, and

- calculating said relative rotation responsive to said length variation and said distance, said relative rotation being proportional to said length variation responsive to said distance independently of a shape of said line between said first and said second object.

15. (previously presented) Method according to claim 14, wherein said line is defined by a channel that runs along said line of said elongated flexible element, a medium being disposed in said channel transmitting a signal responsive to said length variation.

16. (previously presented) Method according to claim 15, wherein said medium suitable for transmitting is a cable

connected to a first point of the channel, and wherein in said measuring step the movement of said cable at a second point of said channel is recorded.

17. (previously presented) Method according to claim 16, wherein said cable has an end connected to a first end of said channel and an opposite end freely moving, and in said measuring step the movement of the opposite end of the cable is recorded with respect to an opposite end of the channel.

18. (previously presented) Method according to claim 14, wherein in said measuring step means for measuring are employed selected from the group comprised of Hall effect sensors, optical sensors, magnetic induction sensors and piezoelectric sensors.

19. (previously presented) Method according to claim 14, wherein said bending of said flexible elongated element is carried out in a predetermined plane.

20. (withdrawn) Method according to claim 15, wherein said medium is a fluid, said channel is tubular and closed at the ends, and said tubular channel contains a predetermined amount of a compressible fluid at a measured starting pressure, whereby said bending of the flexible elongated element causes a pressure variation of said fluid detected in said measuring step.

21. (withdrawn) Method according to claim 15, wherein said medium is a fluid, said channel is tubular with a closed end and filled with a predetermined amount of and incompressible fluid, and a position reference element is arranged at an opposite end of the channel, bending of said flexible elongated element causing a variation of the distribution of the incompressible fluid in the tubular channel and a movement of the reference element that is detected by said means for measuring.

22. (withdrawn) Glove for goniometric measures

comprising at least one goniometric sensor including:

- means for arranging a flexible elongated element between a first and a second object, said element having a neutral axis, which does not change in length when bending, and defining at least one line spaced apart from said neutral axis and parallel to the neutral axis that extends from said first object to said second object; and

- means for measuring a variation in length of said line during a relative rotation between said first and said second object, said relative rotation being proportional to said length variation independently of a shape of said line between said first and said second object;

said glove having at least one finger and a back side, said goniometric sensor being arranged with an end constrained to the back side of the glove and extending for at least one portion of one finger or located completely on the finger.

23. (withdrawn) Glove according to claim 22, wherein at least two said goniometric sensors are used for each finger of the hand, including a first sensor measuring the flexo-extension of the phalanxes, and a second sensor rotated 90° about its own axis for measuring the abduction/adduction of the fingers with respect to the hand.

24. (withdrawn) Device for measuring the rotation of a wrist comprising at least one goniometric sensor including:

- means for arranging a flexible elongated element between a first and a second object, said element having a neutral axis, which does not change in length when bending, and defining at least one line spaced apart from said neutral axis and parallel to the neutral axis that extends from said first object to said second object; and

- means for measuring a variation in length of said line during a relative rotation between said first and said second

object, said relative rotation being proportional to said length variation independently of a shape of said line between said first and said second object;

the at least one sensor arranged with an end integral to said wrist and with an opposite end constrained to a point of an arm that during rotation of said wrist remains substantially fixed, said device detecting the relative rotation of said wrist with respect to said second point.

25. (withdrawn) Device for measuring the rotation of a wrist according to claim 24, comprising two said goniometric sensors at the wrist, which operate in two planes orthogonal to each other and that contain the axis of the forearm, for detecting respectively flexo-extension and ab/adduction of the hand with respect to forearm.

26. (withdrawn) Device for localizing an object in the space by means of goniometric measurement, comprising a plurality of goniometric sensors, each of the sensors including:

- means for arranging a flexible elongated element between a first and a second object, said element having a neutral axis, which does not change in length when bending, and defining at least one line spaced apart from said neutral axis and parallel to the neutral axis that extends from said first object to said second object; and

- means for measuring a variation in length of said line during a relative rotation between said first and said second object, said relative rotation being proportional to said length variation independently of a shape of said line between said first and said second object;

the sensors being arranged in series; and
a computing unit for integrating data obtained by each of the goniometric sensors.